

# Xank: A Treasury-backed Stability-guaranteed Cryptocurrency

Ryan Kim ([ryan@xank.io](mailto:ryan@xank.io))  
Version 0.99.3 (April 20, 2018)

For the most updated version, check: [xank.io](http://xank.io)

# Table of Contents

<b>Abstract</b>	<b>2</b>
<b>Introduction</b>	<b>3</b>
<b>How Xank Implements Price Stability</b>	<b>4</b>
Dash Self-funding Treasury System	4
IMF SDR (Special Drawing Rights)	5
Bridgewater Idea Meritocracy System	7
The Xank Protocol	10
Treasury and Reserve System	11
Measuring the Exchange Rate	14
Transaction Lifecycle	16
Transaction Upsizing	17
Transaction Downsizing	17
Idea and Social Meritocracy Governance	18
Budget Allocation	19
<b>Main Applications</b>	<b>21</b>
For Exchanges	21
For Individuals	22
For Merchants	22
For Businesses	23
For Activists	23
<b>A Post-fiat World</b>	<b>24</b>
Pegging to the Consumer Price Index	24
Giving Power Back to the People	25
<b>Conclusion</b>	<b>28</b>
<b>Appendix</b>	<b>29</b>
Pros and Cons of Existing Stablecoins	29
Tether	29
Maker Dai	30
Basecoin	32
Xank Money Specs	35
<b>References</b>	<b>37</b>

# Abstract

A useful currency should be a medium of exchange, a unit of account, and a store of value. Cryptocurrencies excel at the first, but as a store of value or unit of account, they're really bad. You cannot be an effective store of value if your price fluctuates by 10% on a normal day. This is where stablecoins come in. Stablecoins are price-stable cryptocurrencies, implying the market price of a stablecoin is pegged to another stable asset, like the USD. It might not be obvious why we'd want something like this. Bitcoin and Ether are the two dominant cryptocurrencies, but their prices are very volatile. A cryptocurrency's volatility may fuel speculation, but in the long run, it hinders mass adoption. Businesses and consumers don't want to be exposed to unnecessary currency risk when transacting in cryptocurrencies. You can't pay someone a salary in Bitcoin if the purchasing power of their wages keeps fluctuating. Cryptocurrency volatility also precludes blockchain-based loans, derivatives, prediction markets, and other longer-term smart contracts that require price stability.

In this paper, we introduce Xank, a cryptocurrency whose coins can be partially pegged to arbitrary assets or baskets of goods while remaining completely decentralized and free-floating at the same time. For example, Xank can be pegged to always trade for some amount in IMF SDR. In the future, Xank could potentially even eclipse the fiat and be updated to peg to a consumer price index (CPI) or basket of goods, similar to how central banks manage inflation targets today. The Xank protocol accomplishes this by algorithmically adjusting the count of Xank coins per transaction in response to changes in, for example, the Xank-SDR exchange rate. We are using SDR peg only during buy, sell, and settlement period that we call a "transaction lifecycle" and let supply and demand take over during other times making it the only stablecoin that has real investment value. This ensures it will perform as stablecoin 99.89% of the time which is much better than 0% of the time as other cryptocurrencies yet remains a free-floating cryptocurrency at all times.

# Introduction

If cryptocurrencies are so great, why aren't people using cryptocurrencies for normal, day-to-day transactions?

It's true that older cryptocurrencies are slow and expensive to use such as Bitcoin. But newer generation cryptocurrencies such as Dash claims it can confirm transactions in under a second and handle thousands of transactions per second at fees of less than \$0.15 per transaction, with fees expected to decrease further over time. And merchants would like to take cash over credit or debit cards any day because they can save on fees. Because cryptocurrencies are immune to fraudulent chargebacks, merchants should prefer cryptocurrency payments instead of their fiat counterparts.

None of the current merchants who accept Bitcoin keep their money in Bitcoin—instead, they immediately convert any Bitcoin they receive into fiat. Why? Well, these merchants are not in the business of speculating on Bitcoin. They don't want exposure to Bitcoin market risk any more than they want to hold their money in gold. What if Bitcoin dropped 50% one day? If you ask people who love cryptocurrencies, they might mention many of the attributes they love—for example, the convenience, the control, and the sudo-anonymity. But we bet they still can't accept the idea of keeping their life savings or yearly revenue invested in such a volatile asset. In other words, for cryptocurrencies to become more than just a playground for speculation, there is a great need for them to be a stable store of value.

Even though Dash has solved most of the scalability and privacy issues of Bitcoin by adding a masternode network layer, it created a potential centralization point for the Dash network. This is because a rich person can buy up as many Dash masternodes as possible and control the Dash network similar to a major shareholder would in a corporation. Another issue Dash has its democratic governance model. We'll discuss this more later, but the fundamental problem with democracy is that it doesn't account for people's expertise are very different. Therefore, it often leads to bad decision making.

For any cryptocurrency to gain mass adoption; stability, scalability, privacy, and decentralization are crucial. Without stability, no one will have the confidence to use crypto over fiat any time soon. Without scalability, not many people can use it at the same time. Without privacy, sensitive information such as your salary would end up in the wrong hands. Without decentralization, you simply cannot prevent systemic corruption. In this paper, we will describe how Xank can solve all of this, making it potentially the most beloved cryptocurrency in the world.

# How Xank Implements Price Stability

Xank implements price stability using the decentralized governance and budget system relied upon by one of the leading cryptocurrencies, Dash. In this section, we discuss the following topics:

- How the decentralized governance and budget system subsidize short-run price levels for transaction lifecycle of money.
- How the Xank protocol estimates changes in demand by monitoring the exchange rate between Xank and its pegged assets.
- How the Xank protocol upsizes and downsizes Xank coin count per transaction based on the exchange rate.

## Dash Self-funding Treasury System

One of the greatest challenges of building a cryptocurrency platform is ensuring you create a decentralized system of governance to manage, fund, maintain and expand the project. This key element has been absent in every currency until Dash came along, so the natural response is to create a not-for-profit foundation that is tasked with maintaining the core protocol and promoting the coin but is not really connected to the coin holders in any meaningful way. This approach has a few issues that have been made evident from the experience of older cryptocurrency platforms.

Current crypto foundations are not related to the currency itself by any mechanism that is included in the protocol and are not designed to outlive early adopters when they lose interest. The foundation then struggles to get funding until it implodes and core development of the protocol is left scrambling for funding or depending on charity that can't be counted on and does not allow for proper budgeting and planning. Donations are also unfair to donors because there are always free riders that benefit from the effort done by others without contributing. Other projects have financed themselves by premining coins or running prelaunch sales, which is not a great solution either because control of the funds is centralized and at that stage it is impossible to quantify the future needs of the project.

Through the network of full nodes and the collateral requirement, Dash already has a decentralized network of masternode operators that are invested in the future of the currency, and that as a group can act as stewards of the core protocol development and promotion. Dash proposed a decentralized management system based on the masternode voting mechanism. Masternode operators are not the only ones interested in the success of Dash, but they are the most stable ones because, unlike miners, they can't reuse their asset for any other purpose or coin.

In the budget system, a portion of the block reward is held in escrow by the network itself, in the name of the operators, to be executed in the development and expansion of the ecosystem through the vote of the masternodes in different budget proposals. These funds are directed to supporting development and promotion of the coin. Masternode operators vote on specific budgets and projects to be funded, thus defining the direction the coin is taking. This is done in a completely transparent way through a public portal where new initiatives are proposed and masternodes can vote on them. Something like a decentralized Kickstarter or Lighthouse, the budget can be used for anything that creates value within the ecosystem.

This is a 100% decentralized system powered by the masternodes, where budgets are set and paid directly from the blockchain. The blockchain hires core developers in this way and introduces a new concept of paid blockchain contractors, where people work for and are directly compensated by the network, through the decentralized votes of all masternode operators. One advantage of this model is it can survive early adopters. If early masternode operators sell their coins, the new owner can set up a masternode and with it acquire the right to vote on the budgets and projects. This guarantees there is a working system of maintenance as people come and go, making the network capable of sustaining itself on its own without depending on specific actors.

## IMF SDR (Special Drawing Rights)

The SDR is an international reserve asset, created by the IMF in 1969 to supplement its member countries' official reserves. As of September 2017, 204.2 billion SDRs (equivalent to about \$291 billion) had been created and allocated to members. SDRs can be exchanged for freely usable currencies. The value of the SDR is based on a basket of five major currencies—the US dollar, the euro, the Chinese renminbi (RMB), the Japanese yen, and the British pound sterling. The SDR basket now consists of the following five currencies:

- U.S. dollar 41.73%
- Euro 30.93%
- Renminbi (Chinese yuan) 10.92%
- Japanese yen 8.33%
- British pound 8.09%

The SDR was created by the IMF in 1969 as a supplementary international reserve asset, in the context of the Bretton Woods fixed exchange rate system. A country participating in this system needed official reserves—government or central bank holdings of gold and widely accepted foreign currencies—that could be used to purchase its domestic currency in foreign exchange markets, as required to maintain its exchange rate. But the international supply of two key reserve assets—gold and the US dollar—proved inadequate for supporting the expansion of world trade and financial flows that was taking place. Therefore, the

international community decided to create a new international reserve asset under the auspices of the IMF.

Only a few years after the creation of the SDR, the Bretton Woods system collapsed and the major currencies shifted to floating exchange rate regimes. Subsequently, the growth in international capital markets facilitated borrowing by creditworthy governments and many countries accumulated significant amounts of international reserves. These developments lessened the reliance on the SDR as a global reserve asset. However, more recently, the 2009 SDR allocations totaling SDR 182.6 billion played a critical role in providing liquidity to the global economic system and supplementing member countries' official reserves amid the global financial crisis.

The SDR is neither a currency, nor a claim on the IMF. Rather, it is a potential claim on the freely usable currencies of IMF members. Holders of SDRs can obtain these currencies in exchange for their SDRs in two ways: first, through the arrangement of voluntary exchanges between members; and second, by the IMF designating members with strong external positions to purchase SDRs from members with weak external positions.

In addition to its role as a supplementary reserve asset, the SDR serves as the unit of account of the IMF and some other international organizations.

The value of the SDR was initially defined as equivalent to 0.888671 grams of fine gold—which, at the time, was also equivalent to one US dollar. After the collapse of the Bretton Woods system in 1973, the SDR was redefined as a basket of currencies. Effective October 1, 2016 the SDR basket consists of the US dollar, euro, the Chinese renminbi, Japanese yen, and British pound sterling.

The value of the SDR in terms of the US dollar is determined daily and posted on the IMF's website. It is calculated as the sum of specific amounts of each basket currency valued in US dollars, based on the spot exchange rates observed at around noon London time.

The basket composition is reviewed every five years by the Executive Board, or earlier if the IMF finds changed circumstances warrant an earlier review, to ensure that it reflects the relative importance of currencies in the world's trading and financial systems. In the most recent review (concluded in November 2015), the Executive Board decided that, effective October 1, 2016, the Chinese renminbi met the criteria and was included in the SDR basket.

A new weighting formula was also adopted in the 2015 review. It assigns equal shares to the currency issuer's exports and a composite financial indicator. The financial indicator comprises, in equal shares, official reserves denominated in the member's (or monetary union's) currency that are held by other monetary authorities that are not issuers of the relevant currency, foreign exchange turnover in the currency, and the sum of outstanding international bank liabilities and international debt securities denominated in the currency.

The respective weights of the US dollar, euro, Chinese renminbi, Japanese yen, and British pound sterling are 41.73 percent, 30.93 percent, 10.92 percent, 8.33 percent, and 8.09 percent.

These weights were used to determine the amounts of each of the five currencies included in the new SDR valuation basket that took effect on October 1, 2016. These currency amounts will remain fixed over the five-year SDR valuation period (see daily SDR valuation). Since currency amounts are fixed, the relative weight of currencies in the SDR basket can change during a valuation period, with weights rising (falling) for the currencies that appreciate (depreciate) relative to other currencies over time.

The next review is currently scheduled to take place by September 30, 2021, unless an earlier review is warranted by developments in the interim.

## Bridgewater Idea Meritocracy System

The following is an essay written by Ray Dalio who founded Bridgewater and it's idea meritocracy governance system<sup>[4]</sup>.

I'm often asked what the keys to Bridgewater's success have been. The answer is in the principles laid out in my new book, which I believe anyone can follow to produce exceptional success in whatever they're going after. While there are many principles for handling many different types of situations, I want to convey the most important, overarching ones here.

In one long sentence, our success occurred because we created a real idea meritocracy in which the goal was to have meaningful work and meaningful relationships and the way we went after them was through radical truthfulness and radical transparency. Let's look at these words individually so we are clear on what they mean.

Idea Meritocracy: An idea meritocracy is a decision-making system where the best ideas win out. While lots of people talk about having an idea meritocracy, few have developed one the way we have. To have a real idea meritocracy, people need to do three things:

1. Put their honest thoughts on the table for everyone to see,
2. Have thoughtful disagreements in which there are reasonable back-and-forths in which people evolve their thinking to come up with better decisions than they could come up with individually, and
3. If disagreements remain, have agreed upon protocols that get people past them in idea-meritocratic ways.

While an idea meritocracy doesn't have to operate exactly in any particular way, it does have to by and large follow those three steps.

- **Meaningful Work:** By that I mean work that people get absorbed in, are excited about, and find that working collectively on becomes a common mission so that producing GREAT results is thrilling.

- **Meaningful Relationships:** By that I mean the genuine caring about each other's well being that makes for a strong community.

All of this together makes for a lot of “tough love,” by which I mean people holding each other to very high standards that make both the individual and the organization as excellent as they can be, while caring for each other a lot. This approach isn't unique to Bridgewater. The Navy SEALs are an example of another organization that has meaningful work and meaningful relationships, with lots of tough love to produce exceptional outcomes.

- **Radical Truthfulness:** By that I mean not filtering one's thoughts and one's questions, especially about problems and weaknesses. It makes sense because it's only by talking about these things openly that one can come up with paths for dealing with them effectively.
- **Radical Transparency:** By that I mean giving mostly everyone the ability to see mostly everything. To give people anything less would deny them what they need to form their own opinions about what's happening around them. It would make them vulnerable to others' spin and exclude them from the idea-meritocracy. Radical transparency reduces both harmful office politics and bad behavior because these things tend to take place behind closed doors rather than out in the open.

Some people have called this way of operating radical straightforwardness.

In pursuit of these things, we have developed protocols, technologies, and tools over the last forty years that support them. (I don't have room to explain these things here but you can find more in Principles.) Having them is very helpful, though not essential. After all, long before we built them, we had the desire to operate this way—and it was that desire that drove us to create them in order to build on our successes.

### What It's Like

Most people initially find this process exciting and uncomfortable. While they typically appreciate it intellectually, they also typically are initially challenged by it emotionally because it requires them to separate themselves from their ego's attachment to being right and try to see what they have a hard time seeing. A small minority get it and love it from the start, a slightly larger minority can't stand it and leave the company, and the majority stick with it, get better at it with time, and eventually wouldn't want to operate any other way.

While operating this way might sound inefficient, it is actually extremely efficient. In fact, it is much less efficient to work in an organization in which most people don't know what their colleagues are really thinking. Also, when people can't be totally open, they can't be themselves. As Harvard developmental psychologist Bob Kegan, who has studied Bridgewater, likes to say, "in most companies people are doing two jobs: their actual job and the job of managing others' impressions of how they're doing their job." For us, that's terrible. We've found that bringing everything to the surface 1) removes the need to try to look good and 2) eliminates time required to guess what people are thinking. We have found that, over time, being this way created a virtuous cycle that deepened our

relationships, improved our work, and made us more successful. And it's a blast.

Not only does this approach make the ups bigger and better but it also makes the downs less deep and less bad. Think about some of life's most challenging times. I bet it is as true for you as it has been for me that going through them with people you cared about, who cared about you, and who were working as hard as you were for the same mission was incredibly rewarding. As hard as they were, we look back on some of these challenging times as our finest moments. For most people, being part of a great community on a shared mission is even more rewarding than money. Numerous studies have shown that, beyond meeting basic needs, there is little to no correlation between one's happiness and the amount of money one has, yet there is a strong correlation between one's happiness and whether one is part of a community.

Of course, having an idea meritocracy in practice requires more than just radical truth and radical transparency, especially when it comes to the process of actually weighing different points of view to make decisions and moving forward as a team once a decision has been made. Many of my work principles are about how to do these things, and especially our approach to taking believability-weighted votes, in which the merits of a person's view are assessed in relation to their track record in the area being discussed. (You can get a quick preview into how this works in my recent TED Talk.)

The important thing is not to worry about how to do any of these things precisely. The important thing is to ask yourself whether you want to work in an idea meritocracy or not. Which environment would you rather be in:

- One where people express their views, whatever they are, openly, or one where they're hidden or suppressed?
- One where you get to learn firsthand what's going on or one where you rely on the characterizations (or worse, spin) of others?
- One where the best ideas win out, regardless of where they come from, or one where the "best idea" is whatever the boss decides?

If you feel the need to work in a real idea meritocracy strongly enough, you will find the way to make it happen. If you run your organization, the book provides a framework that you can modify to suit your needs. If you're working for others and have less of an opportunity to shape your organization, you can advocate for one where you are or find some form of idea meritocracy that suits you elsewhere. It's up to you to make that happen, and I hope Principles will help you do it.

## The Xank Protocol

We are using decentralized autonomous organization treasury as subsidizing mechanism for stabilizing the transaction value expressed in fiat currency. How does the Xank protocol measure coin price? How does it adjust count of the coins per transaction?

We tackle these questions here by providing a full specification of the Xank protocol. At a high level, the protocol can be understood as having all the technical properties of a traditional cryptocurrency like Dash since it is actually a fork of it, but with these additional features:

- **A reserve in DAO treasury is created from part of staking rewards.** Then user may choose to use special transaction type called StablePay. Its purpose is to transfer value expressed in fiat currency.
- **The protocol defines a peg.** The protocol defines a pegged asset. This might be the IMF SDR, another fiat currency, an index like the Consumer Price Index (CPI), or a basket of goods—let's use the SDR as an example in the rest of this section. Then, the protocol defines a target price for Xank in the pegged asset—say, 1SDR for 1 Xank coin for specific transaction.
- **The blockchain monitors exchange rates to measure price.** The blockchain sources a feed of the Xank-SDR exchange rate via an oracle system. This can be done in a decentralized way, as we'll detail later.
- **The blockchain upsizes and downsizes the count of Xank coins per transaction in response to deviations of the exchange rate from the peg.**
  - At selling point, when coins are trading for less than purchased SDR rate, number of coins are increased algorithmically until transaction value is equal to original purchase price that we'll detail later.
  - When coins are trading for more than purchased SDR rate, number of coins are decreased algorithmically until transaction value is equal to original purchase price that we'll detail later.
- **All the profits and losses will be put back into the reserve.** If the price decreases during transaction time then all the loss is refunded from the reserve. If the price increases then the receiver receives fewer coins, but their fiat equivalent is still equal to that sent by the sender, and the difference is paid into the reserve.
- **To safeguard from a complete collapse of the economy,** we have set a floor on extreme volatility. This way, it will perform as stablecoin 99.89% of the time which is much better than 0% of the time as other cryptocurrencies yet remains a free floating cryptocurrency during normal times. We have not set a ceiling on extreme volatility. This is because upside for the reserve will ultimately lead to prolonged sustainability for Xank.

To recap, we do not want to peg and unpeg it in a literal sense. What we want to do is simply to track it. For example, if Alice wants to send 100 SDR worth of Xank coins to Bob, two scenarios could occur when Bob receives it ties to exchange it back to fiat. Xank coin could either increase in value against the SDR to let's say 20 SDR or decrease in value to let's say 5 SDR. If when Alice sends 100 SDR, the Xank coin's price was at 10 SDR. That means Alice sends 10 coins. If when Bob receives it, the coin price increases to 20 SDR, that means you only need 5 coins to get 100 SDR in value. When that happens, the protocol deducts 5 coins from the receiving wallet and puts it back to Treasury system. When coin price decreases to 5 SDR, that means you will need 20 coins to get 100 SDR in value. When that happens, the protocol deposits additional 10 coins to the receiving wallet to compensate for that from Treasury system. We could call this functionality Stable Pay similar to Dash's Instant Send or Private Send.

We now fill in the details of the protocol below.

## Treasury and Reserve System

The problem with current cryptocurrencies is price volatility. They cannot be reliably used to transfer value expressed in some fiat currency, because this value may change significantly during the time between fiat-to-cryptocurrency and cryptocurrency-to-fiat exchange. The proposed solution is that a reserve should be created from some part of block rewards. Then the user may choose to use special transaction type called Stable Pay. Its purpose is to transfer value expressed in fiat currency. If the price drops during transaction time, then all the loss is refunded from the reserve. If the price increases then the receiver receives fewer coins, but their fiat equivalent is still equal to that sent by the sender, and the difference is paid into the reserve.

Funding transactions when the coin is lower and taxing the transactions when the coin is higher should help stabilize the reserve. This will require further macroeconomic planning to make sure the reserve is greater than the cost of the subsidy. The cost of subsidy will depend on the volume of transactions  $\times$  value of the coin. The number of masternodes will affect the coins in circulation. A seesaw type of solution used in Pivx will be most likely a great incentive to avoid having too many masternodes that would reduce money in circulation (as coins are in trust).

We believe maintaining independence from central power is very important for any decentralized money. To achieve this, we will be allocating funds from block rewards in the following manner to support the Xank self-funding model. There will be seesaw mechanism between Stakers and Voters so that it will be self-balanced numbers of them at any given time. There will be seesaw mechanism between Subsidy and Treasury so that Subsidy wouldn't go into bankruptcy by itself. Lastly, the reason for forking Dash is very simple. It's because these master node networks have the decentralized autonomous organization

self-funding model. We want to use this Treasury functionality to subsidizing stability related losses described above.

**1. Stakers - 35% of total block rewards**

- Staking is the process of adding transaction records to public ledger of past transactions. Both Bitcoin and Dash use Proof-of-Work (PoW) consensus algorithm to achieve network security. Xank will implement its Proof-of-Stake (PoS) consensus algorithm to solve electricity consumption and 51% attack problems associated with PoW consensus models. Currently, Bitcoin gives 100% of total block rewards to miners leading to a gradual decrease in the number of its full nodes and core developers leaving as a result. To solve these issues, Dash devised a model where it only gives 45% of total block rewards to miners and distributes the rest to other stakeholders in the network. Xank is decreasing this number from 45% to 35% to create its reserve.

**2. Voters - 35% of total block rewards**

- Voting is the process of deciding how to spend Treasury funds and modify the protocol by Xank decentralized autonomous organization. To become Xank Voter (a masternode), you would need to prove ownership of 1,000 Xank coins and put it up as collateral to run a full node to become a certified netizen with voting power. If you sell these coins, you will lose the voting power associated with them. There will be a website set up so that any Xank owner could submit a proposal online with its Constitution and Xank Voters will convene each day to submit their votes on these proposals. At the end of each month, votes will be tallied, and requested grants will be processed and sent to the proposal owners if they are passed via Proof-of-Service (PoSv) model described later. Xank is decreasing this number from Dash's 45% to 35% to create its reserve.

**3. Reserve - 15% of total block rewards**

- Subsidizing is the process of taking profits and losses due to stabilizing the value of transaction lifecycles by pegging to IMF SDR. Every time new Xank coins are minted, Reserve would get a cut of 15% of total block rewards for this purpose. Xank protocol is designed to be highly resistant to death spirals and positive feedback loops. Xank's approach of having the floor allows the system to "default" transparently by de-pegging temporarily, and then gracefully re-pegging as Xank demand returns, rather than staying pegged for forever and then catastrophically failing. We are using SDR peg only during buy, sell, and settlement period that we call a "transaction lifecycle" and let supply and demand take over during other times making us the only stablecoin that has real investment value. This ensures it will perform as stablecoin 99.89% of the time which is much better than 0% of the time as

other cryptocurrencies yet remains a free-floating cryptocurrency during normal times.

#### 4. **Treasury** - 15% of total block rewards

- Funding is the process of compensating the code developers, code auditors, marketers, translators, and other constitutional endeavors. Every time new Xank coins are minted, Treasury would get a cut of 15% of total block rewards for this purpose. Xank is increasing this number from Dash's 10% to 15% to do more than just paying developers and marketers of the network. From the first draft of Xank Constitution mantras detailed later, we will draft a full version of the constitution and pass it through Xank DAO as one of the priority agendas. Having the constitution like this will serve multiple purposes. Without it, the budget proposer wouldn't know what to propose to the masternode network other than the obvious such as software development and network marketing. Without it, the masternodes wouldn't know whether to yes vote or no vote because they are not the obvious ones. Once the first proposal that is not in the realm of the obvious passes through, it will create a positive feedback loop to attract more people to adopt Xank and use it according to the constitution which the sole intention is to build a better society for the humanity.

We don't think just having more money invested automatically makes you a good Netizen. We also don't think just giving voting seats to everyone yields best decision making. Therefore, we will be using the combination of following consensus algorithms to achieve Xank idea and social meritocracy governance.

- **Proof-of-Service (PoSv)** - Base to many additional votes
  - You will need to buy 1,000 Xank coins and put them up as collateral to run a Xank masternode and obtain a base voting seat in Xank congress. To gain more voting rights, you need to prove your other powers like accredited investor status and so on. Xank is proposing to integrate a self-sovereign identity system so that single person can have only one voting seat although that person is allowed to have multiple masternodes for monetization purposes. Instead of Dash's democracy model, Xank has implemented the idea and social meritocracy model so that masternode's voting power is weighted against his or her believability and social index scores for better decision making.
- **Proof-of-Merit (PoM)** - One to many additional votes
  - We believe that people with expertise and high intellect (aka. creators with high vote counts on other blockchain platforms) should have more voting power. To gain more voting rights, you need to prove your other powers like various test scores, talent competition awards, school credentials, Khan

Academy mastery levels, and so on. We will create Bridgewater style 1 to 10 point believability index scored by other voters on more than 100 different subjects so that people's insights and wisdom can be properly reflected in our decision making. No corporation on Earth is operating with complete democracy model decision making and nor should any government or cryptocurrency DAO.

- **Proof-of-Social (PoSc)** - One to many additional votes
  - We believe that a breadwinner of a three or more member family should have more say than a single person. We also believe that people with more social followers should have more say than a person with none to a small number of followers. To gain more voting rights, you need to prove your other powers like breadwinner status, corporate C suite status, institutional leader status, and so on. The social responsibility and accountability should play an important role in the decision-making system because your tent to be more careful and considerate of others if you bear this type of responsibility on your shoulders.

We believe people have different abilities. That's why we think our consensus model will ultimately lead us to best governance for the whole economy.

## Measuring the Exchange Rate

First, we explain how the Xank blockchain obtains the Xank-SDR exchange rate. Since this information is external to the blockchain, the Xank protocol must implement what is known as an oracle system, i.e., a system that uploads outside information to a blockchain. This can be implemented in several ways:

- **Trusted feed.** The simplest approach is to have a single feed that uploads the real-world exchange rate to the blockchain, say from Upbit, Bithumb, or another large exchange. This is obviously a point of centralization, but it bears mentioning nonetheless.
- **Delegated decentralized feed.** A semi-decentralized approach is to select a small group of feed uploaders by vote from holders of Xank. Given this set of feed uploaders, the system can choose the median exchange rate from them at fixed intervals. If any bad actor is consistently identified as trying to corrupt the feed, they can be voted out of the system by coin-holders who have an incentive to preserve the system's long-term value. This captures most of the benefits of decentralization. A similar scheme called Delegated Proof-of-Stake (DPoS) is even used in other protocols to generate entire blocks, though some argue that it's gameable.

- **Decentralized Schelling point scheme.** A fully decentralized approach is to use a Schelling point scheme to determine the exchange rate. A Schelling point scheme operates something like this:
  - Anyone on the network can vote on what they think the average exchange rate was in the last 5 minutes.
  - Every 5 minutes, the votes are aggregated and weighted by the number of coins possessed by each voter. In other words, the more coins you have, the more weight your vote gets.
  - The weighted median is taken as the true exchange rate. Additionally, the weighted 25th and 75th percentiles of price estimates are computed.
  - People who guessed between the 25th and 75th percentiles are rewarded with a preset amount of newly-created Xank. This reward encourages people to vote, and furthermore to vote with the consensus.
  - Optionally, people who guessed outside the 25th or 75th percentiles can be penalized by having some of their stake slashed.

By weighting according to coin ownership, selecting the median, and including a consensus reward mechanism, the scheme largely protects itself from bad actors so long as no actor owns more than 50% of the voting coin base. It will be necessary to design the scheme's reward and penalty rules so that enough people are incentivized to vote. Should these incentives be designed correctly, the result provides the same level of security as that offered by Bitcoin (which is similarly vulnerable if a single miner claims more than 50% of mining CPU), Ethereum (should it implement Proof-of-Stake), etc.

The trusted feed and delegated decentralized feed approaches are easy ways to securely bootstrap the protocol, with some sacrifices to decentralization. The Schelling point scheme is more novel, but we believe we can make it robust by properly engineering its incentives. Either way, all of these implementations are valid alternatives for providing the Xank blockchain with a feed of Xank-SDR prices.

We do not want third-party APIs. For this, we will need to plug an AI directly on multiple providers and extend the data recovered to provide a unique source of information. We could build a centralized AI that sends transactions with specific attachment to provide data within the blockchain to have this information registered inside each block. Then, this source of information will be working as a dApp, providing decentralized information directly for the blockchain. This oracle will conflict and always be challenged by other parties such as CryptoCompare. This is where we should check if it's worth it and how much our solution may be more trusted than theirs. We should be able to provide trust between this product and the users by making links to fundamental assets (aka, Gold) but still, give this only as information that may have speculation and not as complete truth. On the other hand, we can let the community make a consensus on which providers we can trust at any time. Then we can source our information directly from the community. An interesting approach would be to have a base, then add a community layer when appropriate.

As an aside, sourcing a Xank-SDR exchange rate need not depend on liquid currency markets between Xank and fiat. In fact, the exchange rate can be computed by measuring any prices denominated in Xank. For example, if Xank has trouble getting listed on a crypto-fiat exchange, the Xank-SDR rate can be sourced from a crypto-only exchange by first obtaining the Xank-Bitcoin rate, and then separately sourcing the Bitcoin-USD or some other fiat rate. We could even get creative by setting up a Xank-denominated marketplace, observing the Xank price of items with known USD or fiat prices, and computing an implied Xank-SDR rate.

## Transaction Lifecycle

To upsize and downsize the count of Xank per transaction, the Xank protocol defines the lifecycle of a transaction as explicitly including the following four stages:

- **Send Coin.** Alice sends an arbitrary amount of 100 SDR worth of Xank coins to Bob.
- **SDR Peg.** Xank protocol downloads and calculates at the point of send SDR value using decentralized oracle and uploads it to the blockchain.
- **Sell Coin.** Bob is ready to sell the coins received from Alice. When he sells the coins for fiat currency, he receives the same amount as the point of send SDR value, in this case an arbitrary amount of 100 SDR, download from the blockchain.
- **SDR Unpeg.** After the sale, Bob's coins become free floating Xank coins once again.

For a transaction 'start time', we do not use a block timestamp. Each transaction has a specific timestamp bound to it, but to have a more precise way to evaluate the transaction timeline we should use block height for the start and the end. The correct point here is the 'end time' or 'pending time' of a transaction. Pending states do not exist on the blockchain. Transactions are 'pending' for the time they are not approved by miners or blocks, and this cannot be predetermined. Therefore we cannot be bound to a specific 'end time.' We will need to adapt the product to this since it would be problematic. For instance, we could try to predict a 'pending time' based on our knowledge of specific nodes, but this can turn out to be challenging to implement, and even more difficult to maintain. We should only use the start time with the timestamp when the transaction was sent. In other words, confirmed as a valid transaction object and waiting for confirmations. Then to assess the price of it, we can set a minimum number of confirmations to prevent bad behavior. A fallback case will be to accept only one transaction.

**Consensus finality.** Blockchain consensus is not final, i.e., once the transaction is confirmed it may not necessarily be confirmed forever. Instead, users have to wait for more confirmations to make sure that there is a very small probability of transaction reversal. This means that different people may have a different idea of what "transaction end" means. For instance, for accepting \$10 payment somebody may require only one confirmation, but six confirmations if the transaction value is \$10000. Another more cautious person may require

even more confirmation. Problem with consensus finality is also amplified by the fact that stakers may be rewarded for non-honest behavior. How do we deal with this issue?

This is where we should keep a way to impact directly to the crowd using the blockchain. We could add features to verify and trust people. We can even have the rank of trust that will send better rewards to the most trusted workers. Penalties could be inflicted on users in case of bad behavior. Transactions could be confirmed by a select group of trusted stakers. This will get the problem at the source, but once the first block confirms all transactions, we can be certain it is correctly propagated to the blockchain.

## Transaction Upsizing

Transaction upsizing works as follows. If Alice wants to send 100 SDR worth of Xank coins to Bob, two scenarios could occur when Bob receives it and tries to exchange it back to fiat. Xank coin could either increase in value against the SDR to arbitrary amount of 20 SDR or decrease in value arbitrary amount of 5 SDR. Let's assume that when Alice sent 100 SDR to Bob, the Xank coin price was at 10 SDR per coin. That means Alice sent 10 coins. When Bob receives it and at the point of exchange to fiat, the coin price decreases to 5 SDR per coin, that means Bob will need 20 coins to obtain 100 SDR in value. When that happens, the protocol deposits additional 10 coins from the receiving wallet to compensate for that from Xank DAO Treasury system.

**To safeguard from a complete collapse of the economy**, we have set a floor on extreme volatility. This way, it will perform as stablecoin 99.89% of the time which is much better than 0% of the time as other cryptocurrencies yet remains a free floating cryptocurrency during normal times. We have not set a ceiling on extreme volatility. This is because upside for the reserve will ultimately lead to sustainability for Xank. We need to establish limits to insure that we can keep the stable pay system profitable. Then we should have a logic system to set these limits dynamically based on the market prices dictated by our AI (described earlier). Refunds can be guaranteed no loss of value by inflating/deflating accordingly with the market prices. In order to reduce the spreads at the beginning, it could be limited by time (like having a queue of outgoing/incoming that will take care of the pending queue).

## Transaction Downsizing

Transaction downsizing works as follows. This time, let's again assume that when Alice sent 100 SDR to Bob, the Xank coin price was at 10 SDR per coin. That means Alice sent 10 coins. When Bob receives it and at the point of exchange to fiat, the coin price increases to 20 SDR per coin, that means Bob only need 5 coins to obtain 100 SDR in value. When that happens,

the protocol deducts 5 coins from the receiving wallet and puts it back to Xank DAO Treasury system.

**We have now specified the core of the Xank protocol**, which explains how the blockchain increase and decrease count of coins per transaction in response to the exchange rate to peg coin price to SDR.

## Idea and Social Meritocracy Governance

The better political system can be found in other forms of human institutions such as corporations. One such system is Idea Meritocracy System developed by Ray Dalio of Bridgewater. Instead of relying on either autocratic or democratic models of decision making, Bridgewater has been using the meritocratic model in which participants' voting is weighed against individuals' believability index score. In this way the person who has particular expertise on the subject matter has more voting power, in turn, leads to better decisions overall making Bridgewater single bedroom operation 40 years ago to one of the largest hedge funds today. The 1 to 10 point believability index is scored by peers on more than 100 different subjects.

We believe Xank DAO should have a similar governance model to Bridgewater. The main issue plaguing Dash DAO is the buildup of major shareholder type masternodes who could yield monopolistic power making it potentially centralized. Xank DAO should avoid this by integrating self-sovereign identity system on blockchain to limit the number of votes these whales can make. And then, we will build believability index similar to Bridgewater for these voters so that peers could rate them on predefined subjects and categories. The scoring system will be from 1 to 10 base model.

Similar to Dash, if you can purchase 1,000 coins and put it up as collateral to gain one voting seat. That means you cannot sell it before losing your voting power. You can always buy more masternodes by purchasing it at 1,000 coins, but you will not gain more voting seats other than the first one. To gain more voting seats, you need to prove your other powers like accredited investor status, various test scores, talent competition awards, school credentials, breadwinner status, corporate C suite status, institutional leader status and so on. We believe people have different abilities. Therefore, we don't believe in democracy model where everyone gets same voting power regardless of their abilities. And we don't believe in autocracy model where it relies on that single person with good abilities and intention.

Dash forked Bitcoin and created more sustainable governance and budget system that is considered revolutionary. That's why we think Dash is the Bitcoin 2.0, the next generation. It has effectively solved most of Bitcoin's sustainability problems. Bitcoin created the concept of decentralized money where you no longer need intermediaries such as Governments or Central Banks of the world. Even though Bitcoin enjoys massive market cap of about USD 200B at the time of this writing, it has shown significant Sustainability issues in recent years.

Companies like Bitmain and Blockstream yield monopolistic power in mining and development of Bitcoin today.

Dash solved most of the Sustainability problems of Bitcoin by introducing Treasury functionality where 10% of all block rewards go to funding the developers and marketers of the network. In Bitcoin, only the miners were rewarded. Therefore, developers and marketers were out in the cold, so companies such as Blockstream and MIT Media Lab quickly filled the gap and now pays salaries for Bitcoin core developers. This development can potentially make Bitcoin centralized money similar to Fiat Currency. Dash network is different in that it is governed by masternodes with 1,000 Dashes in collateral who receive 45% of block rewards and acting very similar to a Congress for Government where they are the only people with voting power on how the Treasury money is spent. The rest of Dash's block rewards 45% goes to Miners.

Since Xank is a fork of Dash, it will inherit its DAO self-governance and budget system. However we will modify the block rewards structure from Dash's split between 45% for miners, 45% for masternodes, and 10% for the treasury system to Xank's new split between 35% for stakers since we are moving to PoS from Dash's PoW, 35% for voters, and 30% for the treasury system. Of that 30% for the treasury, 15% will be allocated to a dedicated reserve for price stabilizing the coins. Pivx style seesaw will be implemented between stakers and masternodes. Another seesaw will be implemented between reserve and treasury to balance and optimize the DAO governance model.

Even though Dash has solved most of the scalability and privacy issues of Bitcoin by adding a masternode network layer, it created a potential centralization point for the Dash network. Xank has solved this issue by integrating a self-sovereign identity system so that single person can have only one voting seat although that person is allowed to have multiple masternodes for monetization purposes. Instead of Dash's democracy model, Xank has implemented idea and social meritocracy model so that masternode's voting power is weighted against his or her believability and social index scores for better decision making.

## Budget Allocation

Here's the explanation on budget allocation using Xank Voter Proof-of-Service (PoSv) model. The total budget of the network can be calculated by taking 10% of the reward over the period of time between two superblocs, which occur every 16616 blocks or approximately 30.29 days. A voting cutoff occurs before the superbloc, and the final votes are tallied at this point. A proposal must satisfy the condition  $(\text{YES votes} - \text{NO votes}) > (\text{Total Number of Masternodes} / 10)$  in order to be considered passing. Then, in the superbloc, the winning proposals are awarded in the order of the margin by which they are passing until either the entire budget is allocated or no more passing proposals exist. This allows for completely trustless and decentralized allocation of the budget.

Due to the decentralized nature of the masternode system, it is sometimes necessary to form funded organizations, such as committees or companies, to be responsible for some project or task. These are submitted in the same way, but the committee itself receives the funds. Another alternative is to place trusted escrow services between the budget allocation event and the actual submitter of the proposal to ensure that work is paid for in stages, as it is delivered. Some oversight over blockchain contractors is sometimes needed. Each budgeted item requires either a team manager or a committee responsible for implementation of the work. Periodically, this manager is expected to report on budget expenditure and completed work to show the value created from the allocated funds. This allows repeat proposal submitters to build up a reputation and gain trust from the community. Proposals which do not provide regular reports and cannot answer questions about their budget allocation will soon be defunded if it is part of a regular monthly proposal cycle. The result is a kind of self-policing system.

Any unallocated budget is simply never created in the superblock, reducing unnecessary inflation.

# Main Applications

In this section we'll summarize and discuss the principal applications of Xank across the Bitcoin/blockchain ecosystem and for different consumers globally. We split up the beneficiaries into five user classes: Exchanges, Individuals, Merchants, Businesses, and Activists.

The main advantages, applicable to all groups:

- Properties of Xank bestowed upon other asset classes
- Less volatile, familiar unit of account
- World's assets migrate to the Xank blockchain

## For Exchanges

Exchange operators understand accepting fiat withdrawals and deposits with legacy financial systems can be challenging, risky, slow, and costly. Some of those issues include:

- Identifying the right payment providers for your exchange
  - irreversible transactions, fraud protection, lowest fees, etc
- Integrating the platform with banks who have no APIs
- Liaising with these banks to organize compliance, security, and also to build trust
- Prohibitive costs for small value transfers
- 3-7 days for international wire transfers to clear
- Poor and unfavorable currency conversion charges

By providing Xank, an exchange can relieve themselves of the above complications and gain additional advantages, for example:

- Accept crypto-fiats as deposit/withdrawal/storage method rather than using a legacy bank or payment provider
  - Allows users to move fiat in and out of exchange more freely, quickly, cheaply
- Outsource fiat custodial risk to Xank, just manage cryptos
- Easily add other Xank fiat currencies as trading pairs to the platform
- Secure customer assets purely through accepted cryptoprocesses
  - Multisignature security, cold and hot wallets, HD wallets, etc
  - Conduct audits easier and more securely in a purely crypto environment
- Anything one can do with Bitcoin as an exchange can be done with Xank

Exchange users understand how risky it is to hold fiat on an exchange. With the growing number of insolvency events it is often quite dangerous. As mentioned previously, we believe that using Xank exposes exchange users to less counter-party risk than continually holding fiat on exchanges.

## For Individuals

From traders trying to make profits every day; to long term investors trying to keep their Bitcoins securely; to technology savvy shoppers looking to prevent credit card charges or keep their privacy; to philosophical users trying to alter the entire world; to those looking to accept payments internationally more effectively; to those in third world nations looking for access to financial services for the first time; to developers trying to make new technology; to those who have found many applications for Bitcoin. For all those individuals, we believe Xank is useful in similar ways, for example:

- Transact in fiat value, pseudo anonymously, without any middlemen/intermediaries
- Cold store fiat worth by securing one's own private keys
- Avoid the risk of storing fiat on exchanges — move cryptofiat in and out of exchanges faster
- Avoid having to open a fiat bank account to store fiat value
- Easily improve applications that work with bitcoin to support Xank as well
- Anything you can do with Bitcoin as a individual one can even do with Xank

## For Merchants

Merchants wish to focus on their business, not on payments. The dearth of international, inexpensive, faster, ubiquitous payment options continue to plague merchants around the world both large and small. Merchants deserve more. Here are a few of the ways Xank can help them:

- Cost goods in fiat value as opposed to Bitcoin (no moving conversion rates/purchase windows)
- Prevent conversion from Bitcoin to fiat and associated fees and procedures
- Prevent chargebacks, reduce fees, and gain greater privacy
- Provide novel services because of crypto features
- Royalty points, gift cards, more
- Anything you can do with Bitcoin as a merchant one can even do with Xank

## For Businesses

Anti-pollution businesses suffer from lack of governmental support and consumer awareness. Sometimes their higher cost prohibits them from entering the market altogether. Here are a few of the ways Xank can help them:

- Fund composting toilets and alternative septic systems startups that can drastically reduce ocean pollution
- Fund high-rise aquaponics farms startups that can drastically reduce soil pollution
- Fund plant-based diet campaigns and research grants that can drastically reduce global warming
- Fund tiny house movement to reduce carbon footprint at everyone's household level
- Fund installing Tesla style battery wall to every homes and offices in the world to improve air quality
- Anything you can do with ICO (Initial coin offering) as a business one can do with Xank proposal easier if aligned with its Constitution

## For Activists

Anti-discrimination events and campaigns suffer from lack of governmental support and people awareness. Sometimes all they need is little support and recognition. Here are a few of the ways Xank can help them:

- Foster cultural exchanges and understanding through sponsoring K-pop, Anime, Food and other conferences
- Advocate for LGBTQ equality by lobbying for LGBTQ rights at federal, state, and local government levels
- Advocate for women equality by lobbying for women rights at federal, state, and local government levels
- Advocate for race equality by lobbying for different ethnicity rights at federal, state, and local government levels
- Support non-violent anti-hate rallies to counter the negativism and encourage engagement by the larger population
- Fund and foster awareness in installing the accessibility equipments and roads for the disabled in public and private spaces
- Anything you can do with NGO (Non-governmental organization) as a person one can do with Xank proposal easier if aligned with its Constitution

## A Post-fiat World

By pegging to the IMF SDR, a cryptocurrency piggybacks on each of the hard work which world's central banks does to stabilize its currency's buying power. But what happens when Xank gains popularity over time, obtaining users, to the point that it is as popular as credit cards, cash, and the fiat currency itself?

One day, Xank might become so widely used as a medium of exchange that it really starts to displace the world's major fiats in trade volume. Were this to happen, Xank would present the world with both the technology and the chance to develop an independent, transparent, and possibly more stable financial policy than anything that has ever been possible via central bank. What does this mean for the future?

## Pegging to the Consumer Price Index

If Xank begins to control a significant share of the planet's transaction volume, we could assume that some goods will begin to be offered at costs denominated first in Xank. In such a world, the Xank protocol could be updated to a peg that's independent of any local money--most probably, Xank could peg to the Xank-denominated prices of a basket of products. This could be similar to the way the central banks currently relegated into the consumer price index (CPI) to keep the purchasing power equilibrium of the fiat.

A Xank protocol pegged to the CPI implements a financial policy that's independent of any government. At a top level, we believe that governments provide two critical solutions for their citizens in preserving control over the money supply: Verifiability and price stability. Concerning verifiability, a fundamental government helps protect the users of a currency against counterfeiting. In terms of price stability, a central bank helps smooth financial demand and, sometimes, handle unemployment--this is the each central banks' so-called dual mandate. With the dawn of Bitcoin and its own solution into this double-spend problem, the need for centralized verifiability has vanished. For the first time, Xank also removes the requirement for centralized price equilibrium. However well-intentioned and well-insulated a central bank could be, authorities with incorporated central banks will have the incentive to publish money to escape financial debts. We imagine that if taxpayers pick this technology over local currency alternatives, an independent, transparent, cryptocurrency-based monetary policy could offer society a degree of accountability like never before seen in history.

## Giving Power Back to the People

When Oda Nobunaga found himself in fragmented feudal Japan, he sought to unify Japan into a modern state by military force taking territories controlled by many warlords at that period. 500 years later, we find ourselves in similarly fragmented Earth today. The world is fragmented into some 200 countries controlled by many local governments (aka. modern day warlords) even though everyone has been globally connected on the Internet for sometime now. Advances in communications and transportations no longer requires us to use different currencies and passports. The issuers of these documents, the governments are becoming more of hassle than anything else. There are many multinational corporations spanning the globe that are facing difficulties of navigating many jurisdictions and their regulations.

We believe Satoshi Nakamoto is modern day Thomas Edison and Albert Einstein who has forever changed the political paradigm from hard power to soft power. In Nobunaga's era, he had to resolve to territory disputes in order to unite the world. Thanks to Nakamoto's blockchain technology, we no longer need to resolve ourselves to this kind of hard power to unite the world. All we need is the soft power enabled by blockchain technology such as a global currency and governance. This is made possible because the current power state of the world, the United States cannot destroy or stop this type of movement especially if it gains grassroots support like South Korea's candlelight protests by the people.

Having lived in both South Korea and the United States for more than ten years each, two of the most successful countries in the world, I have a good understanding of how the governments of these countries work. Both governments proclaim to serve the people as their masters. However, what I've observed living in both are people were working for the governments as their big brother instead. Too much power is given to the governments, and systemic corruption was rampant in both parliaments. The representatives of the parliaments supposed to work for people's interests but they were devoting most of their time to special interest groups and corporate lobbyists, not the general population.

In the last century, two dominant political systems in the world that shaped our planet were the autocracy still in existence like Kim Jong Un of North Korea and the democracy in most other nations like South Korea and the United States. We believe two political systems fail equally in serving the people. Even though democratic system performed better than the autocratic counterpart on the surface, it is failing us because it has created this huge divide between haves and have-nots.

"The top 1/10 of 1% of the population has a net worth that is equal to the bottom 90% combined. The wealth gap is the largest wealth gap that there has been since the 1935 to 1940 period. And so while we have good conditions here, for the bottom 60% of the population, we have bad conditions. So, the averages don't convey what the picture is because of this disparity. And so, what was tapped into and what we see is there's a large percentage of the population who is hurting, and that there is a conflict between

the “haves” and the “have-nots” and liberal ideas and conservative ideas and all of that. And we have a greater polarity.”

– Ray Dalio, Founder of Bridgewater Associates

Except for the rare case of Singapore, autocratic systems all but failed. Compare North and South Korea. The people in the North is 99.99% ethnically equal to their Southern counterparts and the only thing that separates them is the political system. However, the GDP is 100 to 1 in favor of the South, and everyday survival is the issue in the North because they lack necessities of life. The differences of political systems aside, both systems towers above the people as big brother watching their every move with or without their consent.

One system collect taxes, and the other distributes wages to maintain their hegemony. Both failed us because they are destroying the Earth in ways of polluting our water sources, colluding with corporations to worsen air quality, and making our soils inhabitable for many species. They are failing us because they are printing money like never seen before letting our assets deflate away over time. They are failing us because they are spending too much money in the military build-up and engaging in wars that are not necessary in the first place.

From the first draft of Xank Constitution mantras below, we will draft a full version of the constitution and pass it through Xank DAO as one of the priority agendas.

The draft will be modeled after Ray Dalio’s Principles, the book. We believe Ray Dalio is modern day Adam Smith and Karl Marx. He is a businessman foremost, but he is also a philosopher. He intended to create something for himself and his company, but his system can be successfully deployed in other human institutions. That’s why we are adopting his work and will create Xank DAO Constitution from it. These are the things most important to human survival and prosperity but are not being addressed by current governments and corporations. Therefore we are creating Xank Constitution so that it acts as magnets to attract people to the Xank Economy and guide how the Xank Treasury is spent and ultimately prolonging human sustainability on this Earth and other planets.

Anti-oppression where we need to save the world from these forces:

1. War and Military Buildup
2. Inflation and Quantitative Easing
3. Systemic Corruption

Anti-pollution where we are going to clean up the world:

1. Clean Air

2. Clean Soil
3. Clean Water

Anti-discrimination where any biases based on these are not acceptable:

1. Ethnicity or Disability
2. Religion or Ideology
3. Sex or Sexual Orientation

The scientific data suggest the humanity diversified from a single place in the African continent similar to how the breeds of dogs evolved from wolves. We are the same people even though we came to speak different languages and have different skin colors. We shouldn't demonize others because they look different and have different religion or ideology. We shouldn't hate others because they have different ethnicity or disability. We shouldn't force others to do things they don't want to do because they are different in sex or have sexual orientation. We are all brothers and sisters just like the ones in your home sharing the same planet. We should be more friendly toward and respect each other.

By moving your assets away from government-backed fiat currency to decentralized self-funding and self-governed cryptocurrency, it will alleviate much of the government-sponsored oppression and corruption that is rampant in the world. Ultimately the governments of the world are sponsored by collectively us in the form of taxes. Once you move your assets from fiat currency denominated accounts to cryptocurrency designated accounts, the governments of the world will lose the iron grip they have on you to force paying taxes. This will weaken them to the point where they no longer have the monopoly on taxpayers of the world, therefore, cannot continue to build up the military to wage unnecessary wars on each other. They would no longer need to print money and wage currency wars on each other hence depleting our assets in value. Much of the systemic corruption at the government level happens because they currently exceed the prerogatives of government as the sole printer of money.

Having the constitution like this will serve multiple purposes. Without it, the budget proposer wouldn't know what to propose to the masternode network other than the obvious such as software development and network marketing. Without it, the masternodes wouldn't know whether to yes vote or no vote because they are not the obvious ones. Once the first proposal that is not in the realm of the obvious passes through, it will create a positive feedback loop to attract more people to adopt Xank and use it according to the constitution which the sole intention is to build a better society for the humanity.

# Conclusion

Imagine a world in which Bitcoin starts competing with the fiat currency in transaction usage. You would get paid in Bitcoin but pay rent in fiat, or maybe vice versa. This doesn't make sense given Bitcoin's inherent volatility.

In this paper, we introduced Xank, a robust, decentralized autonomous organization treasury-backed stability-guaranteed cryptocurrency. We think that when we can make it so that purchasing power does not fluctuate, people will shift from a mindset in which they hold as little cryptocurrency as possible, to a mentality in which they are comfortable keeping their savings or earnings in it. We believe this contribution will cause cryptocurrencies to experience a virtuous cycle of adoption and help them transition into a mainstream medium of exchange.

# Appendix

## Pros and Cons of Existing Stablecoins

We believe it's important to understand what others have tried in the past and are trying now. Below is an adapted version of a post by Haseeb Qureshi on Hackernoon that explains the key concepts behind current batch of stablecoins<sup>[1]</sup>.

### Tether

If you want to build a stablecoin, it's best to start with the obvious. Just create a cryptocurrency that's literally an IOU, redeemable for \$1.

You deposit dollars into a bank account and issue stablecoins 1:1 against those dollars. When a user wants to liquidate their stablecoins back into USD, you destroy their stablecoins and wire them the USD. This asset should definitely trade at \$1—it is less a peg than just a digital representation of a dollar.

This is the simplest scheme for a stablecoin. It requires centralization in that you have to trust the custodian, so the custodian must be trustworthy. You'll also want auditors to periodically audit the custodian, which can be expensive.

But with that centralization comes the greatest price-robustness. This scheme can withstand any cryptocurrency volatility, because all of the collateral is held in fiat reserves and will remain intact in the event of a crypto collapse. This cannot be said for any other type of stablecoin.

A fiat-backed scheme is also highly regulated and constrained by legacy payment rails. If you want to exit the stablecoin and get your fiat back out, you'll need to wire money or mail checks—a slow and expensive process.

#### **Pros:**

- 100% price-stable
- Simplest (a big virtue!)
- Less vulnerable to hacks, since no collateral is held on the blockchain

#### **Cons:**

- Centralized—need a trusted custodian to store the fiat (otherwise vulnerable to brick and mortar theft)

- Expensive and slow liquidation into fiat
- Highly regulated
- Need regular audits to ensure transparency

This is essentially what Tether purports to be, though they have not been recently audited and many people suspect Tether is actually a fractional reserve and don't hold all of the fiat as they claim they do. Other stablecoins like TrueUSD are trying to do the same thing, but with more transparency. Digix Gold is a similar scheme, except the collateral is gold instead of fiat. Nevertheless, it shares the same fundamental properties.

## Maker Dai

Say we don't want to integrate with the traditional payment rails. After all, this is crypto-land! We just reinvented money, why go back to centralized banks and state-backed currencies?

If we move away from fiat, we can also remove the centralization from the stablecoin. The idea falls out naturally: let's do the same thing, but instead of USD, let's back the coin with reserves of another cryptocurrency. That way everything can be on the blockchain. No fiat required.

But wait. Cryptocurrencies are unstable, which means your collateral will fluctuate. But a stablecoin obviously shouldn't fluctuate in value. There's only one way to resolve this catch-22: over-collateralize the stablecoin so it can absorb price fluctuations in the collateral.

Say we deposit \$200 worth of Ether and then issue 100 \$1 stablecoins against it. The stablecoins are now 200% collateralized. This means the price of Ether can drop by 25%, and our stablecoins will still be safely collateralized by \$150 of Ether, and can still be valued at \$1 each. We can liquidate them now if we choose, giving \$100 in Ether to the owner of the stablecoins, and the remaining \$50 in Ether back to the original depositor.

But why would anyone want to lock up \$200 of Ether to create some stablecoins? There are two incentives you can use here: first, you could pay the issuer interest, which some schemes do. Alternatively, the issuer could choose to create the extra stablecoins as a form of leverage. This is a little subtle, but here's how it works: if a depositor locks up \$200 of Ether, they can create \$100 of stablecoins. If they use the 100 stablecoins to buy another \$100 of Ether, they now have a leveraged position of \$300 Ether, backed by \$200 in collateral. If Ether goes up 2x, they now have \$600, instead of the \$400 they'd otherwise make.

Fundamentally, all crypto-collateralized stablecoins use some variant of this scheme. You over-collateralize the coin using another cryptocurrency, and if the price drops enough, the stablecoins get liquidated. All of this can be managed by the blockchain in a decentralized way.

We neglected one critical detail though: the stablecoin has to know the current USD/ETH price. But blockchains are unable to access any data from the external world. So how can you know the current price?

The first way is to simply have someone continually publish a price feed onto the blockchain. This is obviously vulnerable to manipulation, but this may be good enough if the publisher is trustworthy. The second way is to use a Schelling Coin scheme, along the lines of TruthCoin. This is much more complex and requires a lot of coordination, but is ultimately less centralized and less manipulable.

Crypto-collateralized coins are a cool idea, but they have several major disadvantages. Crypto-collateralized coins are more vulnerable to price instability than fiat-collateralized coins. They also have the very unintuitive property that they can be spontaneously destroyed.

If you collateralize your coin with Ether and Ether crashes hard enough, then your stablecoin will automatically get liquidated into Ether. At that point you'll be exposed to normal currency risk, and Ether may continue to fall. This could be a dealbreaker for exchanges—in the case of a market crash, they would have to deal with stablecoin balances and trading pairs suddenly mutating into the underlying crypto assets.

The only way to prevent this is to over-collateralize to the hilt, which makes crypto-collateralized coins much more capital-intensive than their fiat counterparts. A fiat-backed cryptocurrency will require only 100K collateral to issue 100K stablecoins, whereas a crypto-collateralized coin might require 200K collateral or more to issue the same number of coins.

**Pros:**

- More decentralized
- Can liquidate quickly and cheaply into underlying crypto collateral (just a blockchain transaction)
- Very transparent—easy for everyone to inspect the collateralization ratio of the stablecoin
- Can be used to create leverage

**Cons:**

- Can be auto-liquidated during a price crash into underlying collateral
- Less price stable than fiat
- Tied to the health of a particular cryptocurrency (or basket of cryptocurrencies)
- Inefficient use of capital
- Most complexity

The first stablecoin to use this scheme was BitUSD (collateralized with BitShares), created by Dan Larimer back in 2013. Since then, MakerDAO's Dai is widely considered the most promising crypto-collateralized stablecoin, collateralized by Ether. An interesting scheme

proposed by Vitalik Buterin is using CDOs to issue stablecoins against loans with different tranches of seniority (the most senior tranches could act as stablecoins).

## Basecoin

As you get deeper into crypto-land, eventually you have to ask the question: how sure are we that we actually need collateral to begin with? After all, isn't a stablecoin just a coordination game? Arbitrageurs just have to believe that our coin will eventually trade at \$1. The United States was able to move off the gold standard and is no longer backed by any underlying asset. Perhaps this means collateral is unnecessary, and a stablecoin could adopt the same model.

This idea is not completely novel—its roots can be traced to arguments made by F.A. Hayek in the 70s. A privately issued, non-collateralized, price-stable currency could pose a radical challenge to the dominance of fiat currencies. But how would you ensure it remains stable?

Enter Seignorage Shares, a scheme invented by Robert Sams in 2014. Seignorage Shares is based on a simple idea. What if you model a smart contract as a central bank? The smart contract's monetary policy would have only one mandate: issue a currency that will trade at \$1.

Okay, but how could you ensure the currency's trading price? Simple—you're issuing the currency, so you get to control the monetary supply.

For example, let's say the coin is trading at \$2. This means the price is too high—or put another way, the supply is too low. To counteract this, the smart contract can mint new coins and then auction them on the open market, increasing supply until the price returns to \$1. This would leave the smart contract with some extra profits. Historically, when governments minted new money to finance their operations, the profits were called the seignorage.

But what if the coin is trading too low? Let's say it's trading at \$0.50. You can't un-issue circulating money, so how can you decrease the supply? There's only one way to do it: buy up coins on the market to reduce the circulating supply. But what if the seignorage you've saved up is insufficient to buy up enough coins?

Seignorage Shares says: okay, instead of giving out my seignorage, I'm going to issue shares that entitle you to future seignorage. The next time I issue new coins and earn seignorage, shareholders will be entitled to a share of those future profits!

In other words, even if the smart contract doesn't have the cash to pay me now, because I expect the demand for the stablecoin to grow over time, eventually it will earn more seignorage and be able to pay out all of its shareholders. This allows the supply to decrease,

and the coin to re-stabilize to \$1.

This is the core idea behind Seignorage Shares, and some version of this undergirds most non-collateralized stablecoins.

If you think Seignorage Shares sounds too crazy to work, you're not alone. Many have criticized this system for an obvious reason: it resembles a pyramid scheme. Low coin prices are buttressed by issuing promises of future growth. That growth must be subsidized by new entrants buying into the scheme. Fundamentally, you could say that the "collateral" backing Seignorage Shares is shares in the future growth of the system.

Clearly this means that in the limit, if the system doesn't eventually continue growing, it will not be able to maintain its peg.

Perhaps that's not an unreasonable assumption though. After all, the monetary base for most world currencies have experienced nearly monotonic growth for the last several decades. It's possible that a stable cryptocurrency might experience similar growth.

But there's no free lunch in economics. Seignorage Shares can absorb some amount of downward pressure for a time, but if the selling pressure is sustained for long enough, traders will lose confidence that shares will eventually pay out. This will further push down the price and trigger a death spiral.

The most dangerous part of this system is that it's difficult to analyze. How much downward pressure can the system take? How long can it withstand that pressure? Will whales or insiders prop up the system if it starts slipping? At what point should we expect them intervene? When is the point of no return when the system breaks? It's hard to know, and market participants are unlikely to converge. This makes the system is susceptible to panics and sentiment-based swings.

Non-collateralized stablecoins are also vulnerable to a secular decline in demand for crypto, since such a decline would inevitably inhibit growth. And in the event of a crypto crash, traders tend to exit to fiat currencies, not stablecoins.

These systems also need significant bootstrapping of liquidity early on until they can achieve healthy equilibrium. But ultimately, these schemes capitalize on a key insight: a stablecoin is, in the end, a Schelling point. If enough people believe that the system will survive, that belief can lead to a virtuous cycle that ensures its survival.

With all that said, non-collateralized stablecoins are the most ambitious design. A non-collateralized coin is independent from all other currencies. Even if the US Dollar and Ether collapse, a non-collateralized coin could survive them as a stable store of value. Unlike the central banks of nation states, a non-collateralized stablecoin would not have perverse incentives to inflate or deflate the currency. Its algorithm would only have one global mandate: stability.

This is an exciting possibility, and if it succeeds, a non-collateralized stablecoin could radically change the world. But if it fails, that failure could be even more catastrophic, as there would be no collateral to liquidate the coin back into and the coin would almost certainly crash to zero.

**Pros:**

- No collateral required
- Most decentralized and independent (not tied to any other cryptocurrency or to fiat)

**Cons:**

- Requires continual growth
- Most vulnerable to crypto decline or crash, and cannot be liquidated in a crash
- Difficult to analyze safety bounds or health
- Some complexity

The most promising project in this category is Basecoin, which builds upon Seignorage Shares by adding a first-in-first-out “bond” queue. They claim that this addition improves the stability properties of the protocol, and have performed several simulations to model various outcomes.

## Xank Money Specs

Masternode Cryptocurrency	Dash	Pivx	Xank
Consensus algorithm	Proof-of-Work (PoW) Proof-of-Service (PoSv)	Proof-of-Stake (PoS) Proof-of-Service (PoSv)	Proof-of-Stake (PoS) Proof-of-Service (PoSv) Proof-of-Merit (PoM) Proof-of-Social (PoSc)
Hashing algorithm	X11	Quark	Quark
Hardware mineable	Yes	No* (but multipool supported)	No* (but multipool supported)
Block time	150 seconds	60 Seconds (Re-targeting every block)	30 Seconds (Re-targeting every block)
Block size	2MB	2MB	2MB
Premine	No premine. But 2M Dash was mined within first 36 hours of launch. (aka. instamine)	60K on genesis block for setup of 6 initial masternodes. Premine was burnt from coin supply at block 279917.	2.6M on genesis block for setup of 6 initial masternodes, early backers, founders, and founding company.
Max. coin supply	Approx. 17.6M after 100 years.	No max. Increases by approx. 2.6M PIV per year. Approx 312M after 100 years.	No max. Increases by approx. 2.6M XANK per year. Approx 312M after 100 years.
Masternodes	Yes	Yes	Yes
Instant Pay	Yes	Yes (SwiftTX)	Yes (SwiftTX)
Private Pay	Yes (Coinjoin)	Yes (ZeroCoin)	Yes (ZeroCoin)
Stable Pay	No	No	Yes
Variable masternode reward	No	Yes (Seesaw algorithm)	Yes (Seesaw algorithm)
Variable mining/staking reward	No	Yes (Seesaw algorithm)	Yes (Seesaw algorithm)

Variable treasury system	No	No	Yes (Seesaw algorithm)
Variable stability subsidy	No	No	Yes (Seesaw algorithm pegged to IMF SDR)
IPv6 support	No	Yes (both wallet & masternode)	Yes (both wallet & masternode)
Decentralized governance	Yes (masternode voting)	Yes (masternode voting)	Yes (masternode voting)
Budget funding	Yes. 10% of block reward.	Yes. 10% of block reward.	Yes. 30% of block reward.
In-wallet BIP38 encryption	No	Yes (private key)	Yes (private key)
Permanent self funded treasury	No	Yes	Yes

# References

[1]

<https://hackernoon.com/stablecoins-designing-a-price-stable-cryptocurrency-6bf24e2689e5>

[2]

<https://dashpay.atlassian.net/wiki/spaces/DOC/pages/8585240/Understanding+the+Governance+and+Budget+System>

[3]

<https://www.linkedin.com/pulse/key-bridgewaters-success-real-idea-meritocracy-ray-dalio>

[o](#)

[4]

<http://www.businessinsider.com/bridgewater-ray-dalio-radical-transparency-app-dots-2017-9>